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EXAMINER

LEE, BENNY T

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 08/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

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09/925,879

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.

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DATE MAILED:

This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on 16 May 2003 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire Three (3) month(s), 2 days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892.       | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948.                  |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449             | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input checked="" type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474 | 6. <input type="checkbox"/>   |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-43 are pending in the application.  
Of the above, claims 15-18, 20, 21, 37-39, 41, 42 are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 1-9, 11-14, 19, 22-30, 32-34, 35, 36, 40 are rejected.
5. ☐ Claims \_\_\_\_\_ are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.
8. ☐ Allowable subject matter having been indicated, formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. These drawings are ☐ acceptable;  
☐ not acceptable (see explanation).
10. ☐ The ☐ proposed drawing correction and/or the ☐ proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner, ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved, ☐ disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections MUST be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.
12. ☒ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

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Applicant's election of Species III, claims 1-13, 19, 22-34, 35, 36, 40, 43 in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

It should be noted that claim 14 should be added to claims readable on the elected species, especially since elected claim 19 directly depends from claim 14.

Claims 15-18, 20, 21, 37-39, 41, 42 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made without traverse in Paper No. 7.

The disclosure is objected to because of the following informalities: Page 1, lines 17, 18, note that "a limited width Frequency bands" needs to be of consistent tense. Page 2, line 12, note that "lithograph" should be rewritten as --lithography--. Page 2, lines 21, 27 and page 4, line 1, note that --(see Fig. 15)-- should follow (65a, 65b, 52), respectively. Page 8, line 6, note that "DISCLOSURE" should correctly be --SUMMARY--. Page 9, lines 16, 17; Page 13, lines 23, 24; page 21, line 18: note that "any of --" should be rephrased for clarity. Page 25, line 10, note that "connector" should correctly be --filter assembly--. Page 26, lines 16, 19, 20, note that --conventional-- should precede the respective occurrence of "superconductive" for a proper characterization. Page 27, line 12 note that --(see Fig. 1)-- should follow "21e"; line 27, note that --as shown in Fig. 1-- should follow "21e".

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Page 29, line 25, note that "cutting" should be rewritten as --cutoff-- for a proper characterization. Page 30, line 23, note that "Owing" should be rewritten as --Due-- for a better characterization. Page 31, line 9, note that --relative to Fig. 4--should follow "above" for clarity of description. Page 23, line 22, note that --(not shown) --should follow "23" for clarity. Page 33, line 5, note that -- for clarity. Page 40, line 18, note that "102" should be rewritten as -- and reference numeral 102 represents --. Page 43, line 26, line 8, note that "increased by more" should be rephrased for clarity; line 23, should "metal plating layer...132" properly be --metal plating layer 133--?

Appropriate correction is required.

The disclosure is objected to because of the following informalities: Note that in the Detail Description of the drawing figures, applicants' should review the description to make sure that all reference labels appearing in the drawing figures have been correspondingly described, especially those reference labels which are unique to a particular drawing figure.

Appropriate correction is required.

The use of the trademark Invar (i.e. "Inver" at page 4, line 6) has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

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The drawings are objected to because of the following: In Figs. 3, 14, reference label --21-- needs to be added; In Fig. 3, the lead line for reference label "27c" appears misdirected; In Figs. 8, 9, 10, 11, 12, 16, note that the cross-hatching for dielectric 112, 122, 134, 142, 152, 53 appears improper; In Figs. 15, 16, 17, note that these figures should be labeled as --PRIOR ART--. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claims 10, 31 are objected to under 37 CFR 1.75© as being in improper form because a multiple dependent claim cannot depend from any multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claim these not been further treated on the merits.

Claims 6, 9; 27-30; 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 6, 27, note that it is unclear how "a plurality of columnar resonating members" relate to the (single) columnar resonating member recited in claim 1 (e.g. in addition to, etc). Moreover, it is unclear whether "a (single) bandwidth adjusting member" is properly associated with the plurality of "resonating members". Note that "the surface of the band adjusting member" lacks antecedent basis.

In claims 8, 9, 29, 30, note that use of the modifier "type" improperly broadens the scope of the recited materials, thereby rendering these claims vague and indefinite.

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In claim 36, note that “the heat insulating portions” and “a plurality of proper positions” are not consistent with the corresponding, singular recitations of claim 35.

In claim 43, note that reference to “at least one composing element” appears to be an incomplete recitation thereby rendering the claim vague and indefinite.

-The following claims have been found objectionable for reasons set forth below:

In claims 2, 23, note that “any of ... or “ should be rephrased as --one of ...and -- for a better characterization.

In claims 3, 4, 5, 6, 7, 24, 25, 26, 27, 28, note that “made” should be rewritten as -- comprised--

In claims 3, 5, 7, 24, 26, 28, should “ordinary” be deleted or alternatively rewritten as -- non-super--? Also, note “applied” should be deleted as unnecessary. Finally, none that “formed” should be rewritten as --disposed--for clarity.

In claims 4, 6, 25, 27, note that “its inner wall” should be rephrased as -- the inner wall thereof--for a proper characterization.

In claim 6, 25, 27 note that “formed” (i.e. after “amount”) should be deleted as unnecessary.

In claims 11-13, 32-34, note that --respective--should precede “signal coupling...” for clarity.

In claim 14, note that --respective-- should precede “heat insulating portion” for a proper characterization.

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In claim 35, note that "connect able to either the...or...--is suggested for clarity.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 43 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by either

Davidson et or the Kubota et al ('041) reference (cited by applicants').

Davidson (Fig. 1A) and Kubota et al both disclose a heat insulating coaxial cable having the conventional inner conductor/dielectric insulator/outer conductor configuration. Moreover, in each reference a heat insulating layer is disposed about the outer conductor.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was

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made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5, 8/3, 8/5, 9/3, 9/5, 11, 14, 19; 22-26, 29/24, 29/26, 30/24, 30/26, 32; 35, 36, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fiedziuszko et al in view of Nicholson and Davidson et al.

Fiedziuszko et al (Fig. 1) discloses a superconductive filter module comprising a superconductive filter assembly (10) including a filter housing (12) with input terminals (28, 30) coupled to respective input/output probes (32, 34) as depicted in Fig. 2. Note that at least one columnar resonator (14) is attached to an inner wall (20) of the housing. Moreover, a heat exchanger (24) is thermally coupled to the housing (12) for cooling the filter assembly. As described at col 4, ls 10-12, the heat exchanger may be part of an envelope (e.g. vacuum) enclosing the filter assembly housing to maintain the filter assembly below the critical superconductivity temperature. However, Fiedziuszko et al differs from the claimed invention in that it does not disclose the following: a superconductive columnar resonator filter configuration; and heat insulating input/output coaxial cables.

Nicholson (Fig. 1A) discloses that a superconductive filter of the type having supeconductive columnar resonators (3) of cylindrical shape with corresponding superconductive center frequency tuning screws (4) all disposed within a housing is conventional in the art.

Davidson et al (Fig. 1A) discloses a coaxial cable having the conventional inner conductor (110), insulator (130) and outer conductor (120). Moreover, an insulating layer (140) covers the



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outer conductor to reduce heat absorption (see col 3, ls 23-25). Furthermore, as evident from Figs. 2, 3, the cable (100) permits for connection with a coaxial connector.

Accordingly, it would have been obvious in view of the references, taken as a whole, to have modified the superconductive filter assembly of Fiedziuszko et al as follows: It would have been obvious to have substituted the alternative columnar filter assembly taught in fig. 1A of Nicholson in place of the columnar filter assembly in Fiedziuszko et al; and it would have been obvious to have use the coaxial cable taught by Davidson et al as the input/output connection cables of Fiedziuszko et al.

Such modifications would have been considered obvious since: the alternative Filter assembly of Nicholson would have been considered an obvious substitution of art recognized equivalent columnar resonator filters which would have stilled provided an appropriate Filter response; and the coaxial cable of Davidson et al would have provided an appropriate connection to the coaxial connectors (28, 30) of Fiedziuszko et al while providing the advantageous benefit of thermal isolation. Furthermore, note that the selection of particular "ordinary" conductor materials would have been an obvious optimization of desired conductive materials within the purview of one of ordinary skill in the art.

Claims 6, 7, 8/7, 9/7, 13; 27, 28, 29/28, 30/28, 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over the preceding rejection as applied to claims 1, 22, respectively above, and further in view of Huang.

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The above combination meets the claimed invention except for bandwidth coupling screws and a loop shape input/output probes.

Huang discloses an exemplary teaching of plural superconductive resonators disposed in a housing and having bandwidth coupling screws (56a-56C) in addition to center frequency tuning screws (60, 62). Moreover, note that the input/output coupling probes (30) are of the loop type.

Accordingly, it would have been obvious in view of the references, taken as a whole, to have: added coupling screws to the above combination; and to have used a coupling loop as the input/output coupling.

Such modifications would have been obvious since: the addition of coupling screws would have import<sup>a</sup>ed the benefit for bandwidth tuning (in addition to frequency tuning) for the combination; while a coupling loop as the input/output coupling would have been an obvious substitution of art recognized input/output couplings.

Claims 12; 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over the above rejection as applied to claims 11, 32, respectively above, and further in view of Olsson.

Note that the above combination discloses the claimed invention except for the flat coupling member.

Olsson (fig. 5) discloses a flat coupling member (67) coupled to input/output coaxial connector (66).

Accordingly, it would have been obvious in view of the references, taken as a whole, to have used a flat coupling member as the input/output coupling probe in the combination. Such a

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combination would have been considered an obvious substitution of art recognized equivalent input/output coupling probes within the purview of one of ordinary skill in the art.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bobadilla et al pertains to resonators with multi-layered coatings. Kintaka et al pertains to superconductive coated resonators. Okazaki et al discloses a superconductive filter assembly.

Any inquiry concerning this communication should be directed to Benny Lee at telephone number (703) 308-4902.



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PRIMARY EXAMINER  
ART UNIT 2817

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08/01/03